

The Role of Professor Ishibashi in the Promotion of Flow Injection Analysis

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When I was invited to write a Message to this special issue of the *Journal of Flow Injection Analysis* in commemoration of Professor Nobuhiko Ishibashi there was no doubt in my mind what I wanted to write about, namely the decisive role that Professor Ishibashi played in the propagation of FIA, primarily in his native Japan, but also in the international analytical chemical community in general.

When my former colleague Professor Jaromir (Jarda) Ruzicka and I conducted the first FIA experiments in 1974 we could not foresee what this approach would entail or promise, nor in our wildest dreams anticipate that this analytical chemical concept literally would revolutionize the ways and means for solution handling in modern analytical chemistry. After all, our university education had taught us, or rather indoctrinated us, to believe that the only possible way to perform sensible chemical assays was to mix all solutions homogeneously and wait for equilibrium to be established for the chemical reactions involved before any rational measurement could be conducted. Nobody questioned this approach, which had been the Gospel Truth for hundreds of years. And, in fact, the first automated, air-segmented continuous flow analysers, the so-called AutoAnalyzers (AA) marketed by the American company Technicon, dutifully mimicked this batch-type approach: Firstly, by incorporating long mixing coils to ensure that mixing became 100% effective in the part of the sample/reagent section where the analytical read-out was to be taken; and secondly by providing long residence times to ensure that steady-state conditions were achieved for all occurring chemical reactions - while the air-segmentation was introduced in order to prevent carry-over and hence preserve sample identity.

In fact, these concepts were so well entrenched that FIA, which radically broke with this view, was met with a great deal of scepticism when it was first introduced. But Professor Ishibashi was enthusiastic about our idea, and actually became one of the very first chemists outside our immediate sphere of colleagues to publish a FIA-paper: In our bibliography of FIA papers, which now counts more than 5000 entries, he was the coauthor of the 31st paper which appeared in 1978. Pressing on as the avant-garde of FIA in his native country he not only produced many FIA-papers himself (eventually he became the author or coauthor of 42 manuscripts published in international journals); his vigour and foresight also inspired many of his fellow scientists to take a "second look" at this new analytical concept. When the first edition of our FIA-book appeared in 1981 he was instrumental (along with Dr. N. Yoza) in having it translated into Japanese. In 1984 he became the founding father of the Japanese Association of Flow Injection Analysis (a Chinese society has since followed, and at the next FA-meeting in Toledo in 1994 motions are being made to form an international society.)

He was also the vital nucleus behind the promotion of the very first periodical devoted entirely to FIA, that is, the Journal of Flow Injection Analysis. Having secured the national success of the journal Professor Ishibashi took the initiative to transforming it into a truly international outlet, attracting authors from all over the world.

I have had the good fortune to meet Professor Ishibashi at numerous occasions. Initially, at the first Flow Analysis Conference in Amsterdam in 1978, and then regularly at FA-meetings and other international analytical conferences. It was clearly evident that he was very proud to be the organizer of FA V in Kumamoto in 1991, during which meeting he so tragically passed away. Therefore I am very happy that I had the opportunity to express my utmost satisfaction with his perfect arrangement of the conference at the mixer preceding the meeting. All encounters with Professor Ishibashi were interesting and invigorating, and it was a distinct pleasure to discuss with him; especially for a person not from Japan who is not intimately familiar with the rituals of the Orient. Behind his always smiling appearance there was a person of strong convictions and scientific integrity which earned him the respect of his fellow scientists. In writing these lines I have been thinking of what in our many encounters and discussions made the strongest impression on me, and I think it was the first time we met back then in Amsterdam at FA I, when he expressed his enthusiasm for FIA. It was really at that moment I came to realize that we had possibly unleashed something useful.

There are possibly two reasons why FIA was accepted so much faster in Japan than anywhere else. One of them is obviously that the first edition of our FIA book was translated into Japanese very soon after it was published in the United States, but the main reason is undoubtedly due to Professor Ishibashi's efforts. A quick look at the bibliography of FIA-publications reveals that in the early years the Japanese entries exceeded, numerically, those of any other foreign nation, even those originating from the United States.

I am sure that Professor Ishibashi would have been as happy as I am about the advances of FIA over recent years. Originally seen as a vehicle for augmenting sample throughput, it has increasingly found its place in the facilitating of novel and ingenious analytical concepts in a variety of application areas. I am truly sad that he is no longer among us, but take pride and comfort in the fact that I have known a man of his capacity and scientific integrity. I am more than convinced that his aura will inspire the scientists of Japan for years to come. And for that reason I rest more than assured that novel FIA research results will appear from his native land. What he initiated is so vital and strong that it will survive him for years to come.